



Electric Vehicle Emergencies

The Pursuit of Solutions

Issues with EV's

- Stranded energy
- Off gassing
- Lithium thermal runaway
- Difficult access to batteries
- Batteries are self-oxidizing
- Traditional firefighting methods are ineffective



How will these cars age?

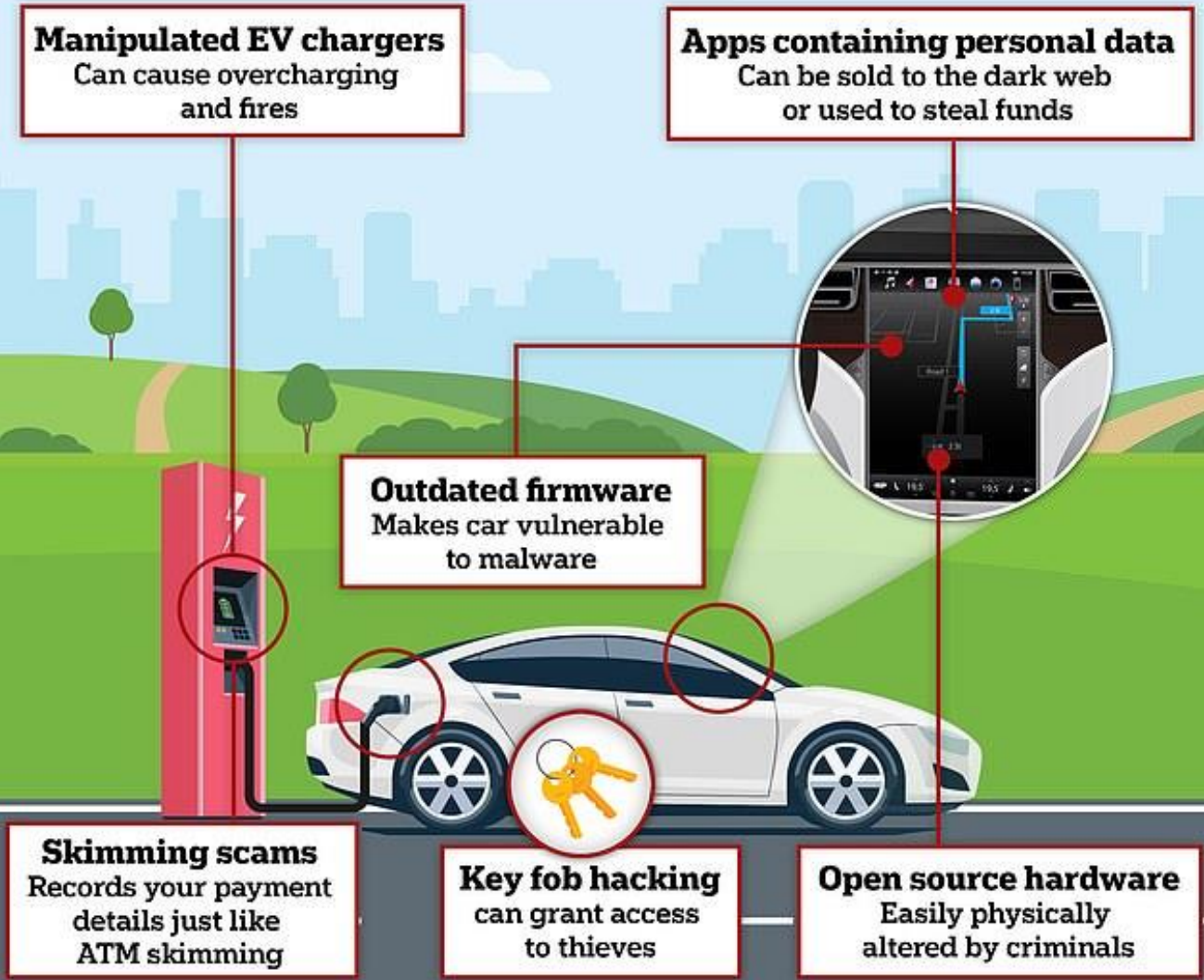


What can cause thermal runaway?

- Overcharging
- Malfunction
- Damage



POTENTIAL RISKS OF HACKED ELECTRIC VEHICLES & CHARGERS



What does it mean to us?

- Danger to responders
- Delays in opening roadways
- Hazards in removal/storage
- Pollution (air/ground)



Piercing Devices

- Designed to slide under car
- Penetrate battery container
- Apply cooling/extinguishing agent
- What if you penetrate the wrong cell?
- How long does it take?
- Where does the water go?



Submersion

- Submerge vehicle
- Water will contain/cool batteries
- Excludes outside oxygen
- How long does it take?
- What do you do with the water?



Containment

- Completely encloses the vehicle
- Cuts off outside oxygen
- Who buys it?
- How does it deploy?
- Where does it go?
- How long is it committed?



Tarps

- Envelopes the vehicle
- Excludes outside oxygen
- Lower cost than container
- Can be carried by responders
- Working on a replacement program
- Working with tow operators



Responder Safety

- Learn to identify EV's
- Learn to identify battery fires
- Isolate the area
- There is no such thing as good smoke!

